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RESPONDING WITH FORCE TO INFORMATION WARFARE:  
LEGAL PERSPECTIVES

by


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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

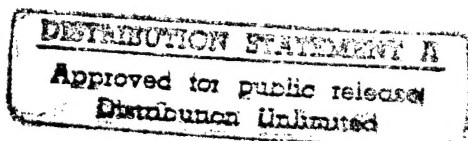
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## ABSTRACT

The Advent of Information Warfare (IW), heralded by many as an approaching Revolution in Military Affairs (RMA), has raised questions concerning the ability of the existing body of international law to respond to novel legal issues that IW will inevitably pose, specifically with regard to the use of force to counter IW attack. It has been suggested that a new or significantly expanded body of international law might be required to address issues pertaining to the use of force in the context of IW. Upon closer examination, however, it appears that while existing law in this area does not necessarily provide definitive and universally accepted answers to all questions that may arise, it does provide the needed structure for analysis. The development of international law in this area will be evolutionary rather than revolutionary.

## RESPONDING WITH FORCE TO INFORMATION WARFARE:

### LEGAL PERSPECTIVES

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#### INTRODUCTION

In recent years, and particularly in the aftermath of the Persian Gulf War, there has been much discussion of a coming revolution in military affairs, in which technological advances are said to be on the verge of profoundly altering not only the way we fight and the weapons we use, but the very way in which we conceive of conflict, about how wars are fought and how operations other than war are pursued. The anticipated revolution is driven primarily by information technologies that allow the manipulation of information and information systems used by and against potential adversaries. While there is no more difficult time and place from which to identify and assess a revolution than at its center while it is happening, there can be no doubt that there are highly significant changes, be they revolutionary or evolutionary, taking place as a result of new information technologies, and that those changes will significantly affect warfighting equipment and hardware, techniques, doctrine, and paradigms. Those changes will in turn compel an examination of their implications for and effects on international law and relationships among nations.

## THE NATURE OF INFORMATION WARFARE

In a sense, information warfare (IW) defies definition. A review of the literature suggests that its scope is limited only by the imaginations of those who contemplate it. Certainly it includes command and communication warfare (C2W), defined as:

The integrated use of operations security (OPSEC), military deception, psychological operations (PSYOP), electronic warfare (EW), and physical destruction, mutually supported by intelligence, to deny information, influence, degrade, or destroy adversary command and control capabilities, while protecting friendly command and control capabilities against such actions.<sup>1</sup>

C2W focuses on command and control in a traditional military environment. IW, however, generally refers to a much larger concept that includes interference with any means by which information is acquired, stored, transmitted, analyzed, or applied. It can involve manipulation of the content (meaning) of the information or physically affecting the hardware with which these functions are performed, or both. It can refer to such "low tech" and ancient applications as the use of spies and the interrogation of prisoners, to historic examples such as Britain's Project Ultra of World War II,<sup>2</sup> and to such futuristic visions as the creation of a false or "fictive" virtual reality that an adversary might be induced to accept as real.<sup>3</sup> In its most inclusive sense, IW has been described as the use of information to achieve national objectives.<sup>4</sup>

The significance of so comprehensive a concept can only be profound:

information in itself is a key aspect of national power and,

more importantly, is becoming an increasingly vital national resource that supports diplomacy, economic competition, and effective employment of military forces... (I)nformation warfare, in its most fundamental sense, is the emerging "theater" in which future nation against nation conflict at the strategic level is most likely to occur. Information warfare is also changing the way the theater or operational-level combat and everyday military activities are conducted. Finally, information warfare may be the theater in which "operations other than war" are conducted... Information warfare, then, may define future warfare or, to put it another way, be the central focus for thinking about conflict in the future.<sup>5</sup>

Nor can we assume that such reverberations will be limited to the activities and relationships among nations. As the same author went on to observe:

...while the concept of information warfare in its computer, electronic warfare, and communications net version is most familiar in military operations involving traditional state to state conflict, there are new and dangerous players in "cyberspace" -the battlefield for information warfare. There has been a proliferation of such players - nonstate political actors such as Greenpeace, Amnesty International, rogue computer hackers... some third world "rebel" who stages a "human rights abuse" for the Cable News Network (CNN), or ideological/religious inspired terrorists with easy access to worldwide computer and communications networks to influence, to exchange information, or to coordinate political action on a global basis.<sup>6</sup>

The immense and growing dependence of the United States and other nations with highly developed economies on information technology will likely make that technology an irresistible and inevitable target for adversaries, be they nations or other entities with agenda and goals incompatible with our own. While those adversaries may have neither our access to, nor our dependence on, information technology, we can assume with near certainty that they will have access to the knowledge and means to threaten the information infrastructure upon which not only

military organizations, but the entire society, depends. Thus the very advances that have made possible what is increasingly viewed as revolutionary change have also created what could prove to be a critical vulnerability, some might even argue a center of gravity, subject to exploitation by those adversaries who would be considered least threatening in any other context. As real-world examples of our vulnerability consider the dissemination of a software worm through the internet in 1988, which infected over 6,000 host computers around the world in less than two hours, and a one-byte coding error (a "6" substituted for a "d") that caused the near total shutdown of telephone service in the Washington-Baltimore area in 1991.<sup>7</sup>

The nature of IW is such that it may be very difficult for a state to know when it has been attacked. In the context of deception operations, interference with communications or tampering with a banking system or securities exchanges, for example, there are innumerable opportunities to do tremendous harm almost instantaneously, with little or no warning and leaving few clues as to who is responsible.<sup>8</sup> This potential for the application of IW in highly ambiguous circumstances poses perplexing legal issues for a target nation seeking to deter, defend and respond, including the question at what point it may legally employ force to counter an IW attack. To determine the extent to which these issues can be addressed within the existing framework of international law, one must examine the circumstances under which a nation may use force generally.



## LEGAL BACKGROUND: AN OVERVIEW

Briefly stated, the tenants of international law are derived primarily from the custom and practice of nations (customary international law), and international agreements to which nations have bound themselves, as these elements are understood, interpreted and applied by nations themselves, international judicial bodies and the community of scholars and commentators on international law.<sup>9</sup> These sources are agreed that, as a general proposition, the use of force as a means of settling international disputes is proscribed. Although historically the power to wage war was considered an attribute of sovereignty, that proposition had come into increasing disrepute by the early years of the 20th Century.<sup>10</sup> A series of international agreements sought to limit the right of nations to resort to war, as well as to codify rules under which war was to be conducted when it did erupt. Today, arguments concerning the legitimacy of the use of force almost invariably are framed in terms of the provisions of the United Nations Charter. Article 2(4) of the Charter reads:

...all Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations.<sup>11</sup>

Some commentators have gone so far as to assert that this prohibition, by virtue of its universal acceptance by the world community, has become incorporated into customary international law, and is now binding on all nations regardless of membership

in the United Nations.<sup>12</sup> It is not, however, absolute. Certain exceptions are recognized. For example, the right of a nation to defend itself if attacked is grounded in customary law and the United Nations Charter, and is undisputed. Article 51 of the United Nations Charter provides:

Nothing in the present charter shall impair the inherent right of individual or collective self defense if an armed attack occurs against a Member of the United Nations until the Security Council has taken measures to maintain international peace and security. Measures taken by Members in the exercise of the right of self defense shall be immediately reported to the Security Council and shall not in any way affect the authority of the Security Council under the Charter to take at any time such action as it deems necessary in order to maintain or restore international peace and security.<sup>13</sup>

The nature and boundaries of the right of self defense, however, are not clearly defined and continue to be debated. The debate centers on two main issues: the meaning of the phrase "if an armed attack occurs," and the extent to which customary international law regarding self defense has been preempted by the United Nations Charter. Additionally, there is continuing debate regarding the extent to which other justifications for the use of force, found in customary international law, have survived the adoption of the Charter.

This is an appropriate point to note that while the word "coercion" frequently arises in the context of discussing the use of force, coercion and force are not necessarily synonymous. Although coercion may refer to armed or military force, it is not necessarily that narrow in its meaning. Rather,

if (coercion) is understood as the purposive attenuation of

the choice of options of the target, it is a potential property of all instruments of policy: the economic, the ideological (mass communication to rank-and-file as a way of supporting or undermining elite control), the diplomatic (inter-elite) as well as the military.<sup>14</sup>

Coercion in this sense does not amount to armed attack and does not create for its target the right to respond with military force in self defense under Article 51. Further, except to the extent that some particular exercise of nonviolent coercion might violate another existing provision of international law, there does not appear to be any effort to equate this sort of coercion with purposes inconsistent with the United Nations.<sup>15</sup> That is not to say, however, that a response in kind, i.e. reciprocal nonforcible coercion, by the target or other nations would not be lawful and appropriate.

The meaning of the words "armed attack" is not as clear as might at first appear. It is apparent that an armed attack constitutes a use of force that violates the general prohibition codified in Article 2 of the Charter. All unlawful uses of force, however, are not necessarily considered "aggression" or "armed attack" allowing invocation of the right of self defense.<sup>16</sup> To qualify as armed attack, the use of force must cross a minimum threshold of magnitude i.e., be more than de minimis. In essence, the issue is one of necessity. Force may not be used in self defense unless it is clear that nonforcible alternatives are insufficient and that the threat posed is serious enough to warrant a violent response, but it is uncertain where that threshold lies. Much of the discussion has focused on

instances of low intensity conflict,<sup>17</sup> and has produced few good answers.

Additionally, it is not entirely clear what is required in order to conclude that an armed attack has in fact occurred. It often has been suggested that a literal reading of Article 51 demands that a target nation must in effect absorb a first strike before it may respond with force against its attacker. So restrictive a reading of Article 51, however, implies a lack of appreciation of modern weapons systems and techniques of nonmilitary coercion.<sup>18</sup> It is widely accepted that a nation may respond in force once it is apparent that an attack has been launched, but how far preparations must have advanced before attack may be said to be inevitable remains obscure. The concept of preemptive defensive attack is looked upon with disfavor in the context of Article 51: for example, Israel's 1981 destruction of Iraq's nuclear reactor, being used in the development of nuclear weapons, met with scholarly as well as political and diplomatic criticism.<sup>19</sup>

Customary international law as it existed at the time of the adoption on the United Nations Charter did not limit the right to self defense to situations in which an "armed attack" had already taken place, but rather allowed exercise of that right in response to a clear threat of force.<sup>20</sup> Applying this customary concept to the Israeli attack on Iraq's reactor offers a much stronger legal foundation for that action, presuming, of course that it remains viable. Some commentators, however, have taken

the position that Articles 2(4) and 51 of the Charter have preempted or severely circumscribed customary international law with regard to permissible uses of force by individual nations.<sup>21</sup> Others have argued with equal vigor that the Charter's reference to the inherent right of self defense in the event of armed attack was never intended to alter that right as it was customarily conceived, and that customary law has survived and continued to evolve in parallel with the Charter:

(A)rticle 51 was not drafted for the purpose of deliberately narrowing the customary-law permission of self-defense against a current or imminent unlawful attack by raising the required degree of necessity... Further, in... formulating the prohibition of unilateral coercion contained in article 2(4), it was made quite clear... that the traditional permission of self-defense was not intended to be abridged or attenuated but... to be reserved and maintained.<sup>22</sup>

In addition to taking a more permissive view regarding the immediacy of the threat needed to justify the exercise of self defense, customary international law allowed nations to react with force in several other situations short of actual armed attack. Examples of these other possible justifications were peacetime reprisals, protection of nationals, humanitarian intervention and self help in securing a nation's internationally recognized legal rights.<sup>23</sup> In general, it appears that these have remained viable only to the extent that they can be fit under a somewhat enlarged umbrella of "self defense." For instance, reprisal or punishment of one nation by another for an illegal act, is difficult to justify as self defense even if its object is to compel compliance with international law. Thus, today, reprisal is generally condemned.<sup>24</sup> Protection by a state

of its own nationals abroad, on the other hand, is viewed favorably as a form of "self defense" of its citizens (similar to the defense of territorial integrity and political independence).<sup>25</sup> Self help to secure or enforce a nation's legal rights seems to have survived as a justification for resorting to force only in the sense of a nation defending itself against a forcible threat emanating from the territory of another nation, not originated by the second nation, but which the second nation is either unable or unwilling to remove. Indeed, this sort of self defensive self help has been explained as an exercise of self defense under Article 51:

...for an armed attack to justify countermeasures of self-defense under Article 51, it need not be committed by another state... Whether an armed attack is initiated by or only from a foreign country, the target state is allowed to resort to self-defense by responding to unlawful force with lawful counter force.<sup>26</sup>

All of this is consistent with the proposition, alluded to earlier in the discussion of Article 2(4), that near universal acceptance of the United Nations Charter has had a significant affect on the evolution of customary international law.

The foregoing is not intended, by any means, to be an exhaustive discussion of permissible use of force, but only to outline the general parameters of this area of international law and to highlight some areas of continuing controversy. The point is that, far from being a settled set of clearly defined rules, this is an area where, at best, there are a limited number of general principles upon which nations are agreed and many opportunities for differing interpretations regarding their

application. This undoubtedly is so for a variety of reasons, not the least of which is the way in which war and peace were conceptualized at the time the Charter was written.

Traditionally, war was defined as a contention (violent struggle) between or among nations, through their armed forces, for the purpose of overpowering each other and imposing such conditions of peace as the victor desired.<sup>27</sup> Nations were considered to be either at peace or at war. These were separate and distinct conditions which allowed little if any ambiguity. The United Nations Charter was adopted almost immediately following the conclusion of World War II, the greatest manifestation of "total war" the world has ever seen. The League of Nations having failed to prevent a second world war, and with the prospect of a world wide nuclear war too terrible to contemplate, a defining purpose of the United Nations was to ensure that there would be no World War III. This sense of absolute separation between war and peace is implicit in the "armed attack/self defense" design of Article 51. What does not appear to have been anticipated, or perhaps its significance was not fully appreciated, was the extent to which low intensity conflict would replace the traditional concept of war in the Cold War period. Almost invariably the controversy regarding the application of Articles 2(4) and 51 involves their application in circumstances where relations between the nations involved are located somewhere on a continuum between peace and war.

## INFORMATION WARFARE IN LEGAL PERSPECTIVE

The challenge posed by IW to this existing body of international law is not unlike that posed by other manifestations of conflict that stop short of war as it was traditionally understood. Once hostilities are clearly and unambiguously underway, i.e., when an incontrovertible armed attack has taken place and a state has invoked its customary and inherent right of self defense as recognized under Article 51 of the United Nations Charter, its right to use force to counter an enemy's use of C2W or IW is not in question. Similarly, if the adversary's use of IW is accomplished by means of an obvious armed attack, for example, the bombing of an IW target, the right to respond with force is conceded. At the other end of the spectrum of conflict, individuals or organizations acting independently or without identifiable state sponsors do not generate issues regarding the use of force by one nation against another, instead they are the subject matter of international law only as it pertains to jurisdiction, extradition and trial. Regardless of political or other motivations, to the extent that their actions violate the law of any state with jurisdiction, they are subject to criminal or civil prosecution in that nation's courts.<sup>28</sup>

The more difficult question arises outside of the peace/war paradigm of the Charter, when there is no pre-existing state of conflict, and the means of application and magnitude of damage is ambiguous. The sheer breadth and inclusiveness of the concept of



IW makes the question "does the use of IW give rise to the right to respond with force?" meaningless. Such a question can only be answered in the context of the circumstances of the particular instance. This, however, is not unlike the analysis required whenever the use of force is examined in equivocal circumstances.

An instructive parallel can be found in discussion of the application of force in response to terrorist attacks. Although IW certainly has the potential to be used as a form of terrorism, e.g. deliberately aimed at civilians or other unlawful targets, it is not only in that context that the analogy is instructive. In both situations, as is also true in the case of low intensity conflict, the target nation suffers damage by an adversary that requires a response, but the "attack" does not fit neatly within the existing model offered by Article 51.

Although not explicitly stated as such, a common thread and arguably the key factor running through such discussions appears to be the question of necessity, as is suggested in this passage:

For the protection of the general community against extravagant claims, the standard of required necessity has been habitually cast in language so abstractly restrictive as almost, if read literally, to impose paralysis. Such is the clear import of the classical peroration of Secretary of State Webster in the Caroline case- that there must be shown 'a necessity of self defense, instant, overwhelming, leaving no choice of means and no moment for deliberation.' The requirement of proportionality... is frequently expressed in equally abstract terms.... There is, however, increasing recognition that the requirements of necessity and proportionality... can ultimately be subjected only to that most comprehensive and fundamental test of all law, reasonableness in particular context.<sup>29</sup>

It is a fundamental fact that nations will defend, with force if necessary, what they perceive to be their genuinely vital

interests. That they consistently endeavor to do so within the parameters of self defense is a tribute to the degree to which the pacific ideal expressed by the Charter has come to be accepted by the international community. Even so, the insistence by individual nations upon being the ultimate arbitrators of the necessity of force is recognized, if not necessarily applauded, by commentators:

... all United Nations members are well aware of their right of self-defense - as they see it. It is doubtful if they would ever ask fellow delegates if a specific incident, actively encountered, would justify self-defense. They would, instead, react individually and debate the right at some later date. Self-defense, by definition, defies deliberation.<sup>30</sup>

It has also been observed:

Competence to make an initial ...determination without previous authorization from the organized community (of nations) must be conceded to the claimant pending the completion of a much more viable world public order... The inevitable time-lag between initiation of highly intense coercion and appropriate determination and authorization by the general security organization, and the ever present possibility of the organization's failure to make any determination at all make such a recommendation potentially disastrous for defending states.<sup>31</sup>

Not all agree.<sup>32</sup> Among those who do, however, such realism should not be interpreted as an abandonment of the Charter or the endorsement of international lawlessness. Rather, it reflects the fact that the development of international law is as much a diplomatic and political process as one of legal interpretation. It evolves through experience and consensus.

IW will undoubtedly contribute substantially to this evolution as its capabilities and boundaries become clearer and the international community becomes better acquainted with its

potential, for good or for evil. It is too soon to know which will predominate. Professor Stein has postulated the development of a massive IW capability that could induce societal psychosis in a nation on the receiving end of such an attack, leaving it disoriented well after the end of hostilities, unable to distinguish reality from illusion, or to think rationally or act on the basis of objective reality. Such a state, he asserts, could rival the carnage and devastation of nuclear war:

...as the techniques of 'cyberstrike' proliferate throughout the world, enabling small powers, nonstate actors, or even terrorist hackers to do massive damage to the United States, 'mutually assured cyberdestruction' may result in a kind of infowar deterrence.<sup>33</sup>

Others see IW as an element in a class of nonlethal weapons that could be used in response to various threats without producing the carnage that is otherwise an unavoidable result of armed conflict, calling them "weapons of mass protection."<sup>34</sup> This, however, raises what may well be the most difficult issue:

A key value and important policy issue central to nonlethality is the ability of nonlethal weapons to allow a nation equipped with them to act earlier against a threat. This same capability brings into question the level of international ... control over a state's ability to venture below the threshold of war.<sup>35</sup>

The very flexibility that an IW response offers the strategist or operational commander introduces yet additional shades of grey in the continuum between nonuse and use of force. For those who assert the efficacy of international law as a means to universal peace, this represents a danger in search of a prohibition. For example, although not discussing IW specifically, one commentator has written:

...any broadening of the interpretation of the right to resort to military force is fraught with danger...Therefore international law must develop along the path of eliminating all loopholes in the legal regulation of the ban on the use of force...Unilateral coercive military measures must disappear from international practice in the future. In this regard international law must become maximally clear and unambiguous in not permitting any broad interpretation of the right to rely on force.<sup>36</sup>

This represents only the flavor of how debate is likely to unfold. In the more immediate future, it has been suggested that computer virus warfare (CVW) constitutes a unique capability comparable to chemical, biological or nuclear warfare, and one that is currently under development by a number of countries. As such, it is urged that consideration be given to classifying CVW as a weapon by international agreement, banning further development and including CVW as part of nonproliferation treaties.<sup>37</sup> A similar functional approach may be anticipated with regard to other applications of IW as well.

#### CONCLUSION

Although the existing body of international law does not necessarily provide definitive and universally accepted answers to the legal issues that will be raised in the course of the development of information warfare, it does provide the structure by which these issues will be addressed and analyzed. IW may well represent a coming revolution in military affairs, but with regard to international law it will be a catalyst for further evolution.

1. Joint Chiefs of Staff Publication 6-0, Doctrine for Command, Control Communications, and Computer (C4) Systems Support to Joint Operations, (Washington , D.C., May 1995), GL5.
2. James W. McLendon, "Information Warfare: Impacts and Concerns," in Battlefield of the Future, eds. Barry R. Scheider and Lawrence E. Grinter (Maxwell AFB, AL.: Air University, September 1995), 174-183.
3. George J. Stein, "Information War - Cyberwar - Netwar," in Battlefield of the Future, eds. Barry R. Scheider and Lawrence E. Grinter (Maxwell AFB, AL.: Air University, September 1995), 157-158.
4. George S. Stein, "Information Warfare," Airpower Journal, Spring 1995, 32.
5. Ibid.
6. Ibid., 33.
7. Science Applications International Corporation, Information Warfare: Legal Policy and Organizational Considerations for Assurance (Washington, D.C.: 1995), 2-7.
8. George F. Kraus, "Information Warfare in 2015," U.S. Naval Institute Proceedings, August 1995, 42.
9. Robertson, Horace B. "Contemporary International Law Relevant to Today's World?" Naval War College Review, Summer 1992, 92-93.
10. Yoram Dinstein, War, Aggression and Self-Defense (Cambridge: Grotius Publications Limited 1988), 22-73; L. Oppenheim, International Law: A Treatise: Vol. II, Disputes, War and Neutrality, 7th ed. (London: Longmans, Green and Co. 1952), 177-181.
11. United Nations Charter, article 2, paragraph 4.
12. Yoram Dinstein, War, Aggression and Self-Defense (Cambridge: Grotius Publications Limited 1988), 91-94.
13. United Nations Charter, article 51.
14. Lori Fisler Damrosch and David J. Scheffer, eds., Law and Force in the New international Order (Boulder, Co.: Westview Press, 1991), 29.
15. Dinstein, 84. It is interesting to note in this context that there is some support for the proposition that the free flow of information across borders, that is the right to

seek and impart information regardless of frontiers, is a protected human right. Such a right, however, cannot at this point be asserted as a principle of international law. See Eric J. Novotny, "Transborder Data Flows and International Law: A Framework for Policy Oriented Inquiry," Stanford Journal of International Law, Summer 1980, 165.

16. Damrosch and Scheffer, eds., 16-25, 36-37.

17. Dinstein, 181-183.

18. Myres S. McDougal and Florentino P. Feliciano, "Legal Regulation of Resort to International Coercion: Aggression and Self-Defense in Policy Perspective," Yale Law School Journal, 68, No. 6, May 1959, 1148.

19. Damrosch and Scheffer, eds., 51-52; Dinstein, 48, 176, arguing the better justification was that at the time Israel and Iraq were technically at war.

20. Dinstein, 172-176.

21. Ibid.

22. McDougal and Feliciano at 1145-1146.

23. Richard J. Erickson, Legitimate Use of Military Force Against State Sponsored International Terrorism, (Maxwell AFB: Air University Press Maxwell Air Force Base, Alabama) 1989, 173-197; Damrosch and Scheffer, eds., 30.

24. Erickson, 180.

25. Ibid., 182-187.

26. Dinstein, 200.

27. Oppenheim, 202.

28. For an overview of the legal and regulatory environments affecting information technology, see Science Applications International Corporation, Information Warfare: Legal, Regulatory, Policy and Organizational Considerations for Assurance, (Washington, D.C.: 1995), chapters 2 and 3.

29. McDougal and Feliciano, 1132.

30. Walter "R" Thomas, Essays on War, (Washington, D.C.: National Defense University Research Directorate) 59.

31. McDougal and Feliciano, 1133.

32. Some commentators have noted a countervailing trend: ... from the Definition of Aggression to the merits phase of Nicaragua, the threshold for lawful armed response to covert action, as articulated in the language of the United Nations and its organs, has become higher." Damrosch and Scheffer, eds., 37-38.

33. Stein, "Information War-Cyberwar-Netwar," 166-168.

34. Chris Morris, Janet Morris and Thomas Baines, "Weapons of Mass Protection Nonlethality, Information Warfare, and Airpower in the Age of Chaos;" Airpower Journal Spring 1995, 15-29.

35. Ibid., 25.

36. Damrosch and Scheffer, eds., 20.

37. McLendon, 193.

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